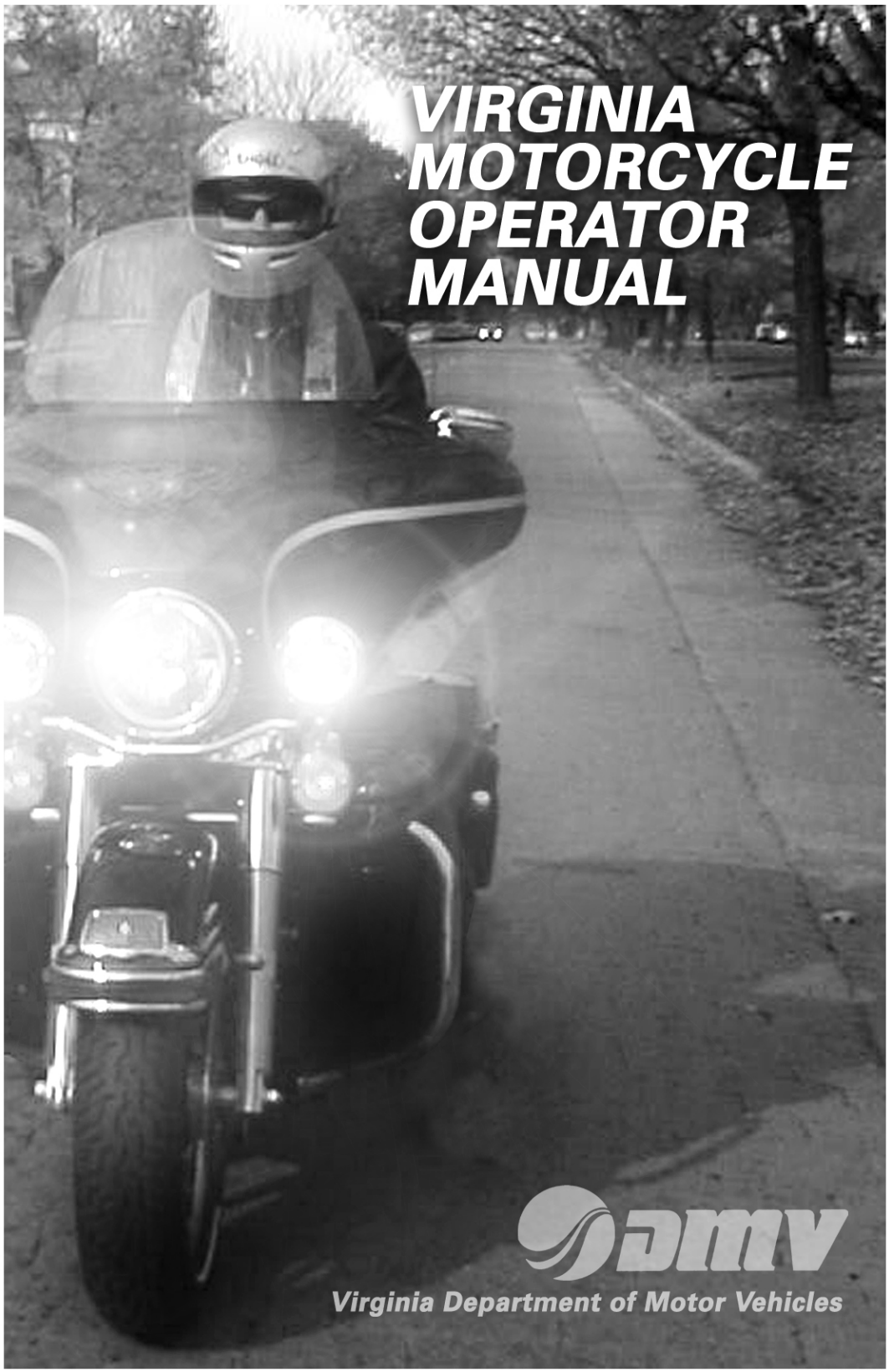


VIRGINIA MOTORCYCLE OPERATOR MANUAL

Virginia Department of Motor Vehicles

Preface

Operating a motorcycle safely in traffic requires special skills and knowledge. This manual provides essential safe driving information for motorcyclists – beginning riders as well as those with more experience.

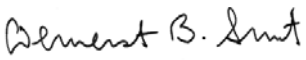
As a motorcyclist, you are subject to the same laws and regulations as other motorists. You are also subject to some special provisions, such as Virginia's helmet and eye protection requirements. You should study this manual along with the *Virginia Driver's Manual* before taking the knowledge and skills tests required to obtain a motorcycle endorsement required for your license.

This manual is part of a comprehensive, statewide program to reduce motorcycle crashes, injuries and fatalities. Established by the General Assembly in 1984, the Virginia Rider Training Program focuses on operator licensing, rider training and public awareness of motorcycles on the road.

Rider training classes are offered throughout the Commonwealth for beginning and experienced motorcyclists. For information about a course near you, dial 1-800-446-9227 or contact the Virginia Department of Motor Vehicles at 1-866-DMV-LINE, 1-800-435-5137 or on the Internet at www.dmvNOW.com.

Highway safety is the responsibility of all drivers. If you ride a motorcycle, you must accept the risk and the responsibility associated with its safe operation. I encourage you to review the information in this manual and practice what you learn.

Sincerely,



Demerst B. "D.B." Smit
DMV Commissioner

This manual was developed by DMV with cooperation from the National Public Services Institute, the Motorcycle Safety Foundation and the National Highway Traffic Safety Administration.

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Licensing Requirements

Operating a motorcycle requires special knowledge and skills beyond those required to operate a car. To prepare for safe, enjoyable riding, you should know all you can about your motorcycle and what's necessary to operate it legally in Virginia.

Motorcycle Registration

If you own and operate a motorcycle in Virginia, you must have a Virginia title, registration card and license plate. The registration fee is $27.50. You may select a personalized plate for an additional $10 per year. Before you can register your motorcycle, you must certify that it is insured with a company authorized to do business in Virginia. Vehicles registered in Virginia must remain insured during the entire registration period. Plus, you must hold a valid driver's license with a Class M designation or a motorcycle driver's license. If you are learning to operate a motorcycle, you may obtain a motorcycle learner's permit. Study this manual and the *Virginia Driver's Manual* before taking knowledge and skills tests required for licensing.

A learner's permit allows you to operate a motorcycle between one half hour after sunrise and one half hour before sunset. You must wear an approved helmet. You are not allowed on limited access highways, such as interstate highways. You may operate the motorcycle only when supervised by a person licensed to operate a motorcycle and who is 1) at least age 21 or older, 2) alert and able to assist you and 3) providing immediate supervision from a separate accompanying motorcycle. Exception: Your parent, legal guardian or sibling may supervise you if they are licensed to operate a motorcycle and are age 18 or older. No one, other than the operator, can be on the motorcycle. If you are under age 19, you must hold the motorcycle learner's permit for at least nine months.

If you already hold a valid Virginia driver's license and have not previously held a motorcycle endorsement, you may add a Class M designation, which will allow you to also operate a motorcycle. To receive this designation, you must pass the motorcycle knowledge and road skills tests and hold a motorcycle learner's permit for 30 days. If you have proof of successfully completing the Virginia Rider Training Program (see p.42) within the past two years, you are exempt from holding the motorcycle learner's permit for 30 days and from taking the motorcycle road skills test. However, if you are under age 19, you must hold the motorcycle learner's permit for at least nine months. The motorcycle designation costs $2 per year. Your designation is valid for the same period of time as your driver's license. When you renew your driver's license, remember to renew your Class M designation also.

If you do not hold a driver's license, you may obtain a driver's license that allows you to operate only a motorcycle. The motorcycle-only driver's license costs $6 per year and is valid for 5 years.

Safety Equipment

A motorcycle operator in Virginia is required to wear a protective helmet. The operator must also wear a face shield or safety glasses/goggles or have the motorcycle equipped with safety glass or windshield of a type approved by the Department of State Police. Passengers are also required to wear an approved helmet.

Preparing To Ride

As a rider, what you do ***before you start*** a trip goes a long way toward determining whether or not you'll get where you want to go safely. Before taking off on any trip, a safe rider makes a point of:

- Wearing the right gear.
- Checking the motorcycle.
- Getting familiar with the motorcycle.

Wear the Right Gear

When you ride, your gear is "right" if it ***protects*** you. In any crash, you have a far better chance of avoiding serious injury if you are wearing:

- An approved helmet.
- Face or eye protection.
- Protective clothing.

The Helmet

Crash are not rare events—particularly among beginning riders. And one of every five motorcycle crashes reported results in head or neck injuries—the worst kind of injuries you can get. Head injuries are your greatest threat. They are just as severe as neck injuries—and far more common. Wearing a helmet neither raises nor reduces your risk of neck injury. But head injuries are another matter. Wearing a securely fastened helmet is the single most important thing you can do to improve your chances of surviving a crash.

Helmet Use

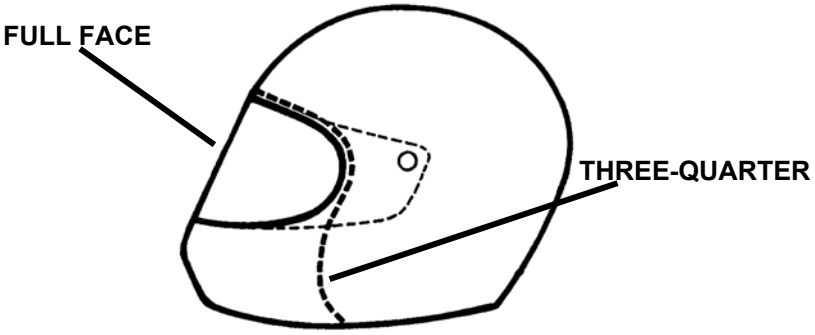
Some riders don't wear helmets because they think helmets will limit their view to the sides. Others wear helmets only on long trips or when riding at high speeds. Here are some facts to consider:

- An approved helmet lets you see as far to the sides as necessary. A study of more than 900 motorcycle crashes, where 40 percent of the riders wore helmets, failed to find even one case in which a helmet kept a rider from spotting danger.
- Most crashes happen on short trips (less than five miles long), just a few minutes after starting out.
- Even low-speed crashes can be fatal. Most riders are going slower than 30 mph when they get hurt. At these speeds, helmets can cut both the number and the severity of head injuries by half.

No matter what the speed, unhelmeted riders are ***three times*** more likely to die from head injuries than are riders who are wearing helmets at the time of the crash.

Helmet Selection

There are two primary types of helmets, providing two different levels of coverage, three-quarter, and full face.



Whichever style you choose, you can get the most protection out of that type helmet by making sure it:

- Meets U. S. Department of Transportation (DOT) and state standards. Helmets with labels from the American National Standards Institute (ANSI), or the Snell Memorial Foundation give you added assurance of quality.
- Fits snugly, all the way around.
- Has no obvious defects such as cracks, loose padding, or frayed straps.

Not all helmet damage is obvious. If you're thinking of buying a used helmet, first make sure it's made by a company that will check it for damage. Then have the manufacturer check it before you pay for it.

Whatever helmet you decide on, make sure to keep it securely fastened on your head when you ride. Otherwise, if you have a crash, it's likely to fly off your head before it gets a chance to protect you.

Eye and Face Protection

A plastic faceshield can help protect your whole face in a crash. It also protects you from wind, dust, dirt, rain, insects, and stones thrown up from cars ahead. These things are distracting and can be painful. If you have to deal with these problems, you can't devote your full attention to the road.

Goggles can protect your eyes from all these things, though they won't protect the rest of your face like a faceshield does. A windshield is no substitute for a faceshield or goggles. Most windshields will not protect your eyes from wind. Neither will eyeglasses or sunglasses. Glasses won't keep your eyes from watering, and they might blow off when you turn your head while riding.

To be effective, eye or face protection must:

- Be free of scratches
- Be made of material that does not shatter.
- Give a clear view to either side
- Fasten securely, so it cannot be blown off.
- Allow air to pass through, to reduce fogging.
- Allow enough room for eyeglasses or sunglasses if needed.

Tinted eye protection should not be worn at night or any other time when little light is available.

Clothing

Clothing can help protect you in a crash.

Jacket and pants should cover your arms and legs completely. Make sure they fit snugly enough to keep from flapping in the wind, yet loosely enough to let you move freely. Leather offers the most protection, but heavy denim does an adequate job in most cases, at a reasonable price. However, sturdy synthetic material can give you a lot of protection as well. Wear a jacket even in warm weather. Many jackets are designed to protect you without getting you overheated, even on summer days.

Boots and shoes should be high enough to cover your ankles and sturdy enough to give them support. Soles should be made of hard, durable material. Heels should be short, so they do not catch on rough surfaces. If your boots or shoes have laces, be sure they're tucked in so they won't catch on your motorcycle.

Gloves are also important. They give you a better grip and help protect your hands in a crash. Your gloves should be made of leather or heavy cloth.

In cold or wet weather, your clothes should keep you warm and dry, as well as protect you from injury. You cannot control a motorcycle well if you are numb. Riding for long periods in cold weather can cause severe chill and fatigue. A winter jacket should resist wind and fit snugly at the neck, wrists, and waist. Rain suits should be of good quality and designed for riding. Otherwise they may tear apart or balloon up at high speeds. Some gloves are made to keep wind or rain from going up your sleeves.

Check the Motorcycle

If something's wrong with the motorcycle, you'll want to find out about it before you get in traffic. Here are the things you should check before every ride.

While walking to the motorcycle take a good look at your tires. If one looks low, check the pressure. The motorcycle will not handle properly if the air pressure is too low and could result in tire failure. Look under the bike for signs of an oil or gas leak. If there is a puddle, determine the cause and get the leak fixed.

Before mounting the motorcycle make the following checks:

- ***Fluids***—Oil and fuel levels.
- ***Headlight and Taillight***—Check them both. Test your dimmer to make sure both high and low beams are working.
- ***Turn Signals***—Turn on both right and left turn signals. Make sure all four lights flash.
- ***Brake Light***—Try both brake controls, and make sure each one turns on the brake light.
- ***Hydraulic Fluids***—Check sight windows when accessible. At a minimum, check weekly.
- ***Coolants***—Check reservoir when accessible. At a minimum, check weekly.

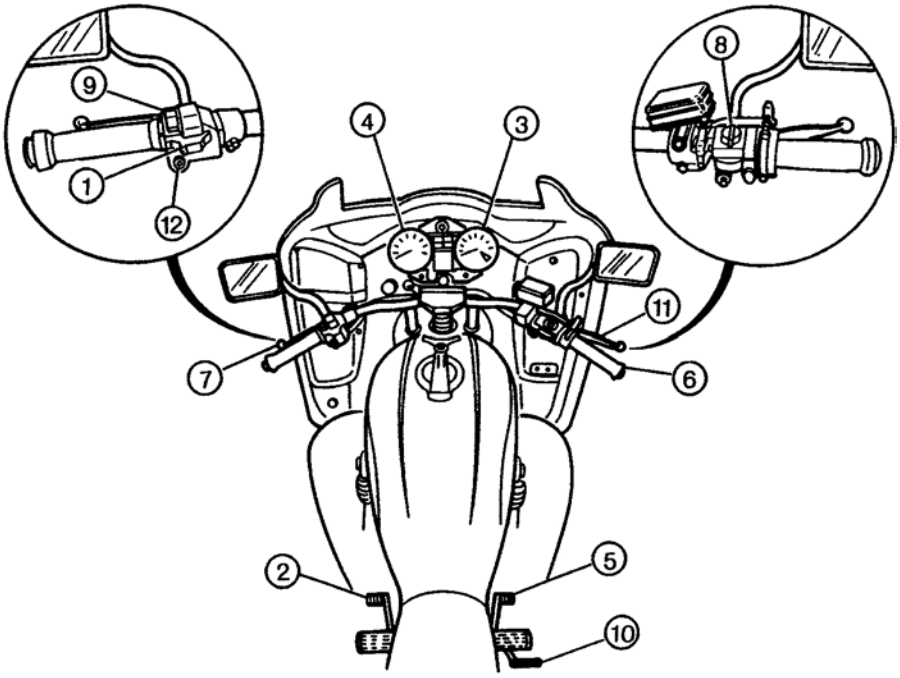
Once you have mounted the motorcycle the following checks should be completed before starting out:

- ***Clutch and Throttle***—Make sure they work smoothly. The throttle should snap back when you let go.
- ***Mirrors***—Clean and adjust both mirrors before starting out, because it's difficult to ride with one hand while you try to adjust a mirror. Adjust each mirror to let you see the lane behind and as much as possible of the lane next to you. When properly adjusted, a mirror may show the edge of your arm or shoulder--but it's the road behind and to the side that's most important.
- ***Brakes***—Try the front and rear brake levers one at a time. Make sure each one feels firm and holds the motorcycle when the brake is fully applied.
- ***Horn***—Try the horn. Make sure it works.

Get Familiar with the Motorcycle

Make sure you are completely familiar with the motorcycle before you take it out on the street. This is particularly important if you are riding a ***borrowed*** cycle, as over half of the motorcycle crashes occur to riders with less than six months experience on the crash cycle. If you are going to use an unfamiliar motorcycle:

(1) Make all the checks you would on your own cycle.
(2) Find out where everything is, particularly the turn signals, horn, headlight switch, fuel control valve, and engine cut-off switch. Make sure you can find and operate them without having to look for them.
(3) Check the controls. Make sure you know the gear pattern. Work the throttle, clutch, and brakes a few times before you start riding. All controls react a little differently.
(4) Ride very cautiously until you are used to the way the motorcycle handles. For instance, accelerate gently, take turns more slowly, and leave yourself extra room for stopping.



1. Turn Signal Switch
2. Gear Change Lever
3. Tachometer
4. Speedometer & Odometer
5. Rear Brake Pedal
6. Throttle
7. Clutch Lever
8. Engine Cut-off Switch
9. Light Switch
10. Kick Starter
11. Front Brake Lever
12. Horn Botton

Control for Safety

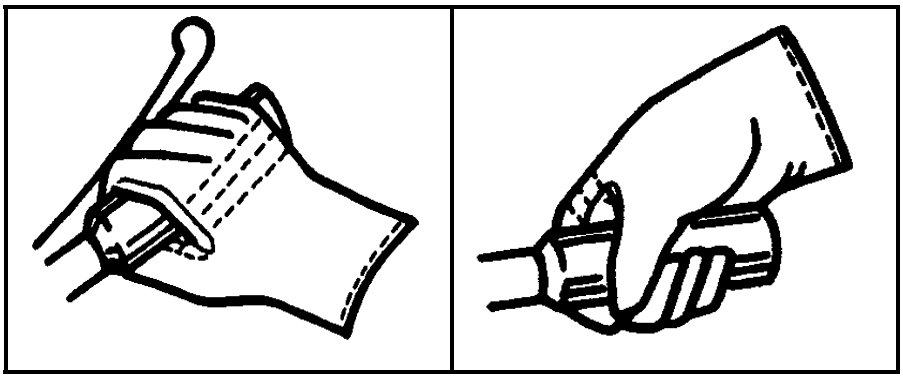
This manual cannot teach you how to control direction, speed, or balance. That's something you can learn only through a lot of practice. However, here are a few pointers to help you keep control and avoid crashes.

Body Position

To control a motorcycle well, your body must be in the proper position.

Seat—Sit far enough forward so that your arms are slightly bent when you hold the handlegrips. Bending your arms lets you turn the handlebars without having to stretch.

Hands—Hold the handlegrips firmly. This will help you keep your grip if the motorcycle bounces. Start with your right wrist down. This will help you keep from crashally using too much throttle—especially if you need to reach for the brake suddenly. Also, ensure that the handlebars are adjusted so your hands are even with, or below your elbows. This allows you to use the proper muscles for precision steering.



RIGHT **WRONG**

Knees—Keep your knees against the gas tank. This will help you keep your balance as the motorcycle turns.

Feet—Keep your feet firmly on the footpegs. Firm footing can help you keep your balance. Don't drag your foot along the ground. If your foot catches on something, you could lose control of the motorcycle. Keep your feet near the controls. This lets you get to the controls fast if you have to use them. Also, don't let your toes drop down—they may get caught between the road and the footpeg.

Posture—You should sit fairly erect. This lets you use your arms to steer the motorcycle rather than to hold yourself up.

Turning

New riders often try to take curves or turns too fast. When they can't hold the turn, they end up crossing into another lane of traffic or going off the road.

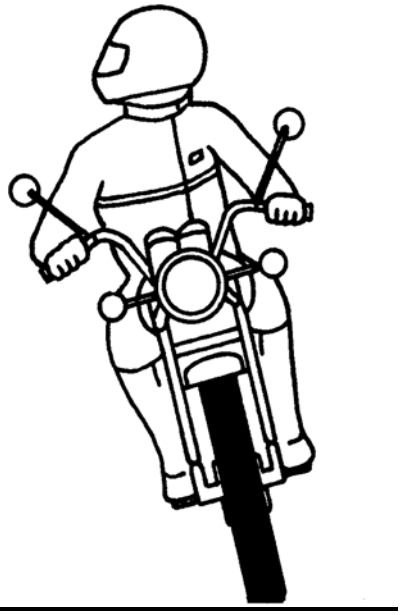
Or, they overreact and brake too hard causing a skid and loss of control. Until you learn to judge how fast you can safely take a curve, approach all turns with caution. When turning use the following four steps for better control:

- Slow
- Look
- Lean
- Roll

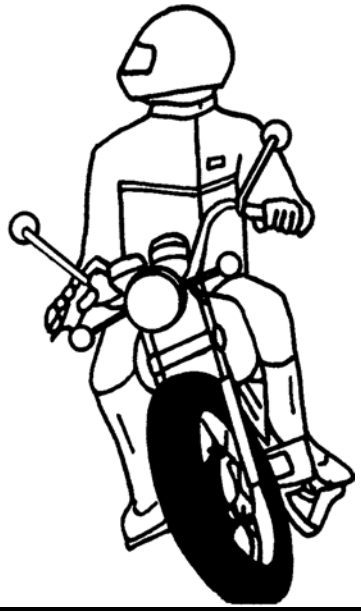
Slow—Reduce speed before the turn by closing the throttle and, if necessary, applying both brakes.

Look—Use your head and eyes for directional control. Look through the turn to where you want to go. Turn just your head, not your shoulders and keep your eyes level with the horizon.

Lean—To turn, the motorcycle must lean. To lean the motorcycle, push on the handgrip in the direction of the turn. Push left – lean left – go left. Push right – lean right – go right. Higher speeds and/or tighter turns require more lean.



LEAN WITH MOTORCYCLE



LEAN MOTORCYCLE ONLY

In normal turns, the rider and motorcycle should lean together. In slow tight turns, lean the motorcycle only and keep your body straight.

Roll—Roll on the throttle through the turn. Maintain steady speed or gradually accelerate. Avoid deceleration while in the turn.

Braking

Your motorcycle has two brakes. You need to use both of them. The front brake is more powerful. It provides about three-quarters of your motorcycle's total stopping power. The front brake is not dangerous if you learn to use it properly. Here are some things to remember about braking:

- Use both brakes *every time* you slow down or stop. If you use only the rear brake for "normal" stops, you may not develop the habit or the skill to use the front brake properly when you really need to stop quickly.
- Apply both brakes *at the same time*. Some people believe that the rear brake should be applied first. That is not a good idea. The sooner you apply the front brake, the sooner it will start slowing you down.
- Remember, you *can* use both brakes in a turn. Some motorcycles have integrated braking systems which link the front and rear brakes together, on application of the rear brake pedal. Using the front brake is dangerous only if the road is very slippery and you use the brake incorrectly. Otherwise, if you know the technique using both brakes in a turn is possible although it should be done very carefully. When leaning the motorcycle some of the tractions available is used for cornering. So if you use the brakes when leaned less traction is available for stopping. A skid can occur when too much brake is applied.

Shifting Gears

There is more to shifting gears than simply getting the motorcycle to pick up speed smoothly. Crashes can happen if you use the gears incorrectly when downshifting, turning, or starting on hills.

Downshifting

Shift down through the gears as you slow down or stop. And stay in first gear while you are stopped. This way you can move out quickly if you need to.

Make certain you are going slowly enough when you shift into a lower gear. If you're going too fast, the motorcycle will lurch, and the rear wheel may skid. This is more likely to happen when you are going downhill or shifting into first gear. Under these conditions, you may need to use the brakes to slow down enough to downshift safely.

Shifting for a Turn

It is best to change gears *before* entering a turn, however, sometimes shifting is necessary. If so, remember to do so smoothly. A sudden change in power to the rear wheel can cause a skid.

See and Be Seen

In crashes with motorcyclists, car drivers often say that they never saw the motorcycle. It's hard to see something you're not looking for, and most drivers are not looking for motorcycles. Also, from ahead or from behind, a motorcycle's outline is much smaller than a car's.

Even if a driver sees you coming, you aren't necessarily safe. Because you and your bike are smaller than other vehicles, it's easier for others to mistake your distance and speed. However, you can do many things to make it easier for others to recognize you and your cycle.

Clothing

Most crashes occur in broad daylight. If you don't wear bright clothing, you greatly increase your risk of not being seen during the day. Remember, your body is half of the visible surface area of the rider/cycle unit. Clothing that helps you be seen includes bright orange, yellow, or green jackets or vests. And your helmet can do more than protect you in a crash. If it is brightly colored, it can help others see you.

Any bright color is better than drab or dark colors. Fluorescent clothing (helmet and jacket or vest) is best for daytime riding. At night, it is best to wear reflective gear. Reflective material on the sides of helmet and vest will help drivers coming from the side spot you. Reflective material can also be a big help for drivers coming toward you on the road ahead or from behind.

Headlight

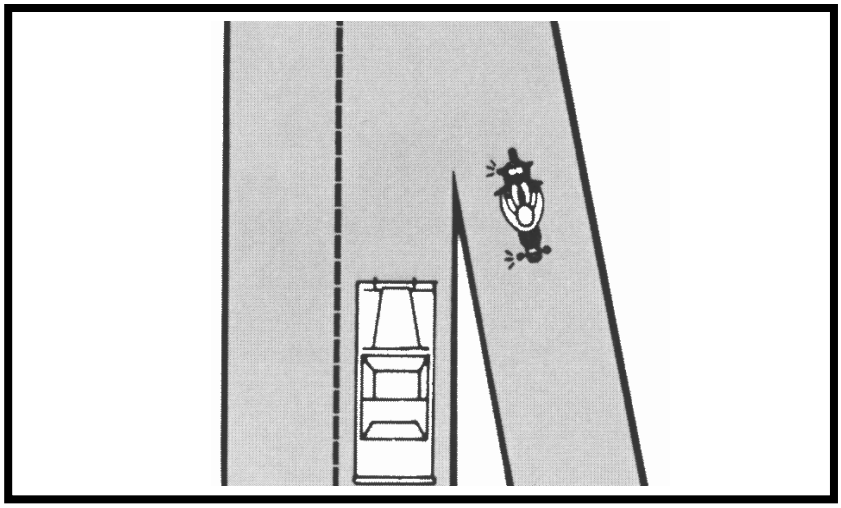
The best way to help others on the road see your motorcycle is to keep the headlight on—at all times. Studies show that, during the day, a motorcycle with lights off is twice as likely to go unnoticed by other road users. Also, use of the high beam in daylight increases the likelihood that you will be seen by oncoming drivers.

Signals

The signals on a motorcycle are similar to those on a car. However, signals are far more important to a rider.

Turn Signals

Turn signals do two things for you. First, they tell others what you plan to do. Use them anytime you plan to change lanes. Use them even when you think no one else is around. It's the cars you don't see that's going to give you the most trouble. Second, your signal lights make you easier to spot. Drivers behind are more likely to see your turn signal than your taillight. That's why it's a good idea to use your turn signals even when what you plan to do is obvious. For example, when you are on a freeway entrance ramp, drivers on the freeway are more likely to see you—and therefore make room for you—if you use your turn signal.



Not turning off a signal is just as bad as not turning it on. A driver may think you plan to turn again and pull directly into your path. Once you've made your turn, check your signal to make sure it is off.

Brake Light

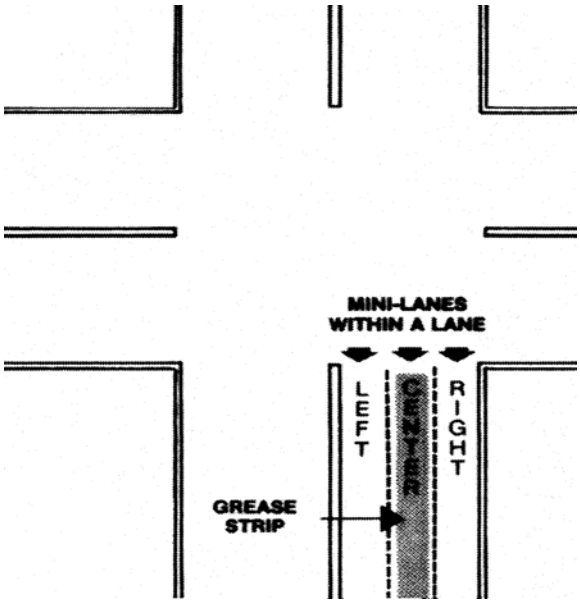
Your motorcycle's brake light is usually not as noticeable as the brake lights on a car—particularly when your taillight is on. (It goes on with the headlight.) Still, you can help others notice you by tapping the foot brake lightly before you slow down. This will flash your brake light. It is especially important to signal others by flashing your brake light whenever:

- You are going to slow down more quickly than might be expected (for example, when you are going to make a turn off a high-speed highway).
- You are going to slow where others may not expect it (for example, when you slow to turn in the middle of a block, at an alley).

If you are being followed closely, it's a good idea to flash your brake light before you slow—even if you won't be slowing more quickly than might be expected. The tailgater may be looking only at you and fail to see something farther ahead that will make you slow down.

Position for Being Seen

Though the size of a motorcycle can make it harder for other drivers to spot you, you can make size work to your advantage. A car driver has very little choice about where he positions his car in a lane. However, each marked lane gives a motorcyclist three possible paths of travel, as indicated in the illustration.



Each “mini-lane” is approximately four feet wide. By selecting the appropriate “mini-lane,” you can make yourself more easily seen by others on the road.

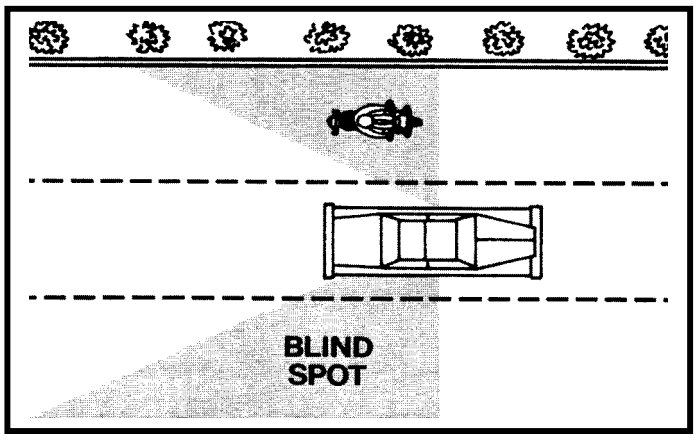
In general, there is no best position for riders when it comes to being seen, however, no portion of the lane need be avoided—including the center. Some people feel that riding in the center portion is dangerous. They argue that the grease strip which often appears in this portion (formed by droppings from other vehicles) is slippery and will cause riders to fall. Such fears are overblown.

Grease strips are usually no more than two feet wide. Since the center portion of the lane is four feet wide, you can operate to the left or right of the grease strip and still be within the center portion. Unless the road is wet with rain, the average grease strip gives just as much traction as the rest of the pavement. Of course, big build-ups of grease—as may be found at very busy intersections or toll booths—should be avoided.

The main idea of positioning yourself to be seen is this: Ride in the portion of the lane where it is most likely that you will be seen. In other words, ride where it will be most difficult for other drivers to miss seeing you. Here are some ways to do this.

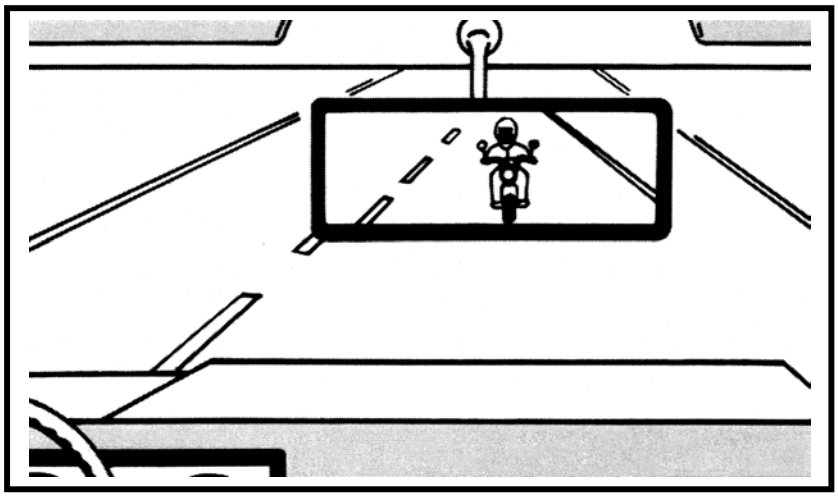
Stay Out of Blind Spots

Either pass the other vehicle or drop back. When you pass a car, get through the blind spot as quickly as you can. Approach with care. But once you are alongside, speed up and get by quickly.



Let the Driver Ahead See You

When behind a car, try to ride where the driver can see you in his rearview mirror: Riding in the center portion of the lane should put your image in the middle of the rearview mirror-where it's most likely to be seen. Riding at the far side of a lane may let you be seen in a sideview mirror. But most drivers don't look at their sideview mirrors nearly as often as they check the rearview mirror.



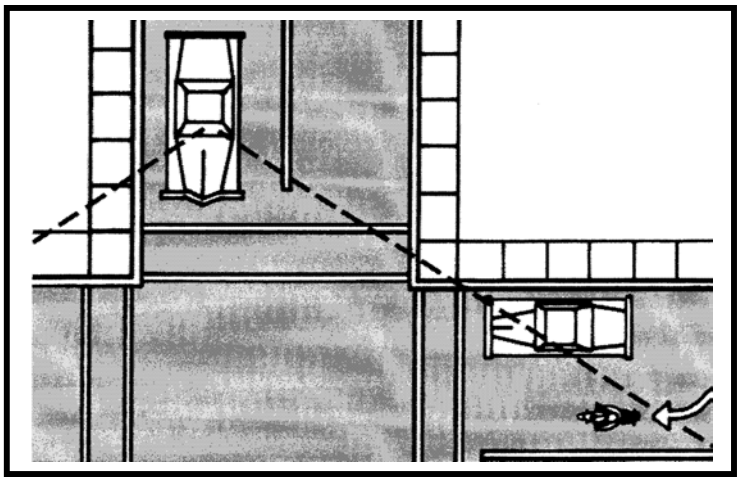
Help Drivers at Intersections See You

The most dangerous place for any rider is an intersection. That's where most motorcycle crashes take place. The most common cause of these crashes is that the car driver infringed on the rider's right-of-way.

The best way to increase your chances of being seen as you approach an intersection usually is to ride in the portion of the lane that gives the best view of oncoming traffic and with your lights on. As you enter the intersection, position yourself to provide a space cushion all around you that allows you to take evasive action.

If you are approaching a blind intersection, it is best to move to the portion of the lane that will bring you into another driver's field of sight at the earliest possible moment. In the picture below, the rider has moved to the left portion of the lane—away from the parked car—so the driver on the cross street can see him as soon as possible.

Remember, the key is to see as much as possible. This will usually make you as visible as possible while protecting your space.



Horn

Get your thumb on the horn button and be ready to use it whenever you need to get someone's attention. It is a good idea to give a quick beep before you pass anyone you think may move into your lane. Here are some situations.

- A driver in the lane next to you is getting too close to the vehicle ahead and may want to pass.
- A parked car has someone in the driver's seat.
- Someone is in the street, riding a bicycle or walking.

In an emergency, a warning beep won't be enough. Blast the horn in a true emergency and be ready to slow or turn away from the danger.

The two biggest dangers facing you as a rider are (1) oncoming cars that turn left in front of you, and (2) cars on side streets that pull out into your lane. Never count on "eye contact" as a sign that a driver has seen you and will yield the right-of-way. All too often, a driver looks right at a motorcyclist and still fails to "see" him.

No matter what you do, you can't guarantee that others will see you. The only eyes you can really count on are your own. A good rider is always "looking for trouble"—not to get into it, but to stay out of it.

Scan, Identify, Predict, Decide, Execute (SIPDE)

Experienced riders make a practice of being aware of what is going on around them. They can create their riding strategy by using a system known as SIPDE.

SIPDE is an acronym for the process used to make judgements and take action in traffic. It stands for:

- Scan
- Identify
- Predict
- Decide
- Execute

Let's examine each of these steps.

Scan

Search aggressively for potential hazards. Scanning provides you with the information you need to make your decisions in enough time to take action.

Identify

Locate hazards and potential conflicts. The hazards you encounter can be divided into three groups based on how critical their effect on you may be.

Cars, trucks and other vehicles—They share the road with you, they move quickly, and your reactions to them must be quick and accurate.

Pedestrians and animals—They are characterized by unpredictability and short, quick moves.

Stationary objects—Chuckholes, guard rails, bridges, roadway signs, hedges, or rows of trees won't move into your path, buy may create or complicate your riding strategy.

The greatest potential for a conflict between you and other traffic is at intersections. An intersection can be in the middle of an urban area or at a

at a driveway on a residential street—anywhere other traffic may cross your path of travel. Most motorcycle/automobile collisions occur at intersections. And most of these collisions are caused by an on-coming vehicle turning left into the path of the motorcycle. Your use of SIPDE at intersections is critical.

Before you enter an intersection, search for:

- Oncoming traffic that may turn left in front of you.
- Traffic from the left.
- Traffic from the right.
- Traffic approaching from behind.

Be especially alert at intersections with limited visibility. Be aware of visually "busy" surroundings that could camouflage you and your motorcycle.

Predict

Anticipate how the hazard may affect you. The moving direction of a potential hazard is important. Clearly, a vehicle moving away from you is not as critical as a vehicle moving in your path.

Determine the effect of the hazard—where a collision might occur. How critical is the hazard? How probable is a collision? This is the "What if..?" phase of SIPDE that depends on your knowledge and experience. Now estimate the consequences of the hazard. How might the hazard or your effort to avoid it affect you and others?

Decide

Determine how to reduce the hazard. There are only three things you can do:

- Communicate your presence.
- Adjust your speed
- Adjust your position.

Communication is the most passive action you can take since it depends on the response of someone else. Use your lights and horn, but don't rely on the actions of others.

Adjustments of speed can be acceleration, slowing or stopping.

Adjustments of position can be changing lane position or completely changing direction.

In both cases, the degree of adjustment depends on how critical the hazard is and how much time and space you have. The more time and space you have to carry out your decision, the less amount of risk you'll encounter.

In areas of high potential risk, such as intersections, give yourself more time and space by reducing the time you need to react. Cover both brakes and the clutch and be ready with possible escape routes.

Execute

Carry out your decision. This is when your riding skills come into play. And this is where they must be second nature. The best decision will be meaningless without the skills to carry it out. Know your limits and ride within them.

Using Your Mirrors

While it's most important to keep track of what's happening ahead, you can't afford to ignore what's happening behind. Traffic conditions can change quickly. By checking your mirrors every few seconds, you can keep track of the situation behind.

Knowing what's going on behind can help you make a safe decision about how to handle trouble ahead. For instance, if you know someone is following you too closely, you can decide to avoid a problem ahead by turning away from it, rather than by trying to stop quickly and risk being hit by the tailgater.

Frequent mirror checks should be part of your normal scanning routine. Make a special point of using your mirrors in these situations:

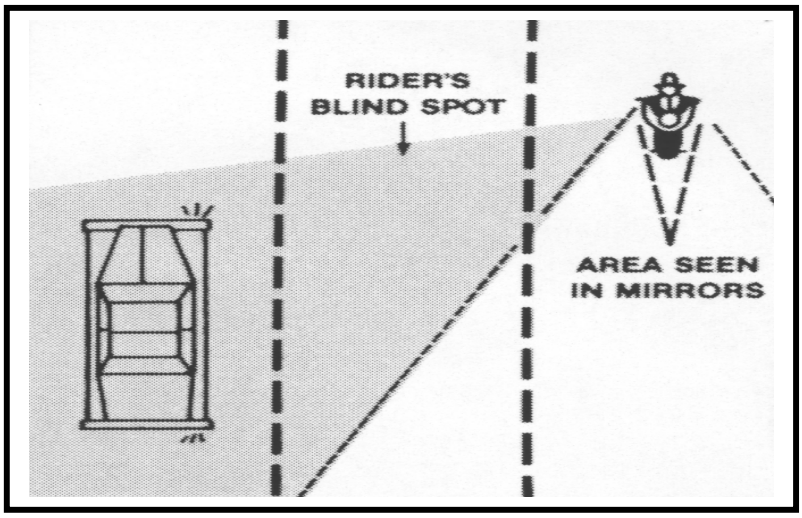
- **When you are stopped at an intersection.** Watch cars coming up from behind. If the driver isn't paying attention, he could be right on top of you before he sees you.
- **Anytime you plan to change lanes.** Make sure no one is about to pass you.
- **Anytime you will slow down.** It is especially important to check if the driver behind may not expect you to slow, or if he may be unsure about exactly where you will slow. For example, he might see you signal a turn and think you plan to slow for a turn at a distant intersection rather than at a nearer driveway.

Many motorcycles have rounded, convex mirrors. These give you a wider view of the road behind than do flat mirrors. However, they also make cars seem farther away than they really are. If you are not used to convex mirrors, get familiar with them. Here's how: *While you are stopped, pick out a parked car in your mirror. Try to form a mental image of how far away it is. Then, turn around and look at it. See how close you came.* Practice with your mirrors until you become a good judge of distance. Even then, allow extra distance before you change lanes.

Head Checks

Mirrors do a pretty good job of letting you see behind. But motorcycles have blind spots just like cars. Before you change lanes, make sure to make a head check: turn you head, and look at traffic to the side. This is the only way you can be sure of spotting a car just about to pass you.

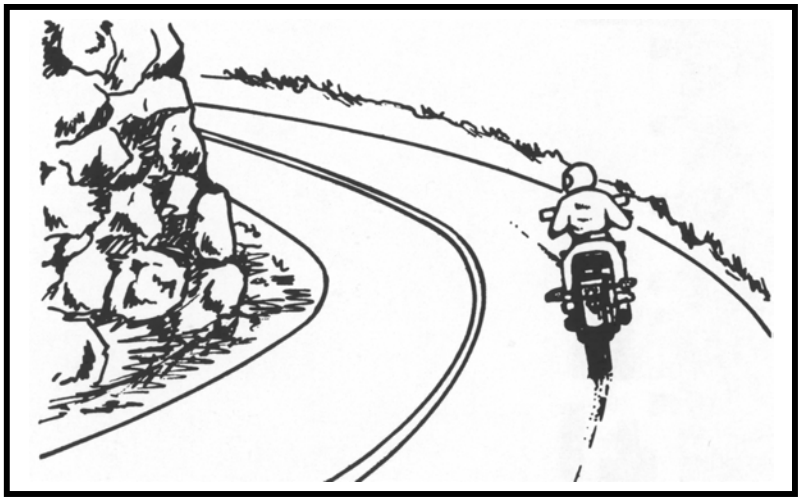
On a road with several lanes, make sure to check the far lane as well as the one next to you. A driver in the distant lane may be headed for the same space you plan to take.



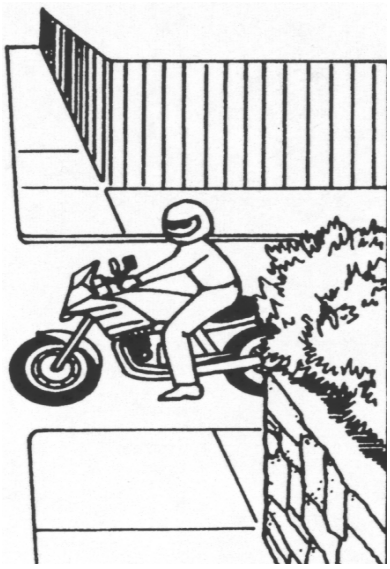
Position To See

As a motorcycle rider, you can put yourself in a position to see things that a car driver cannot see.

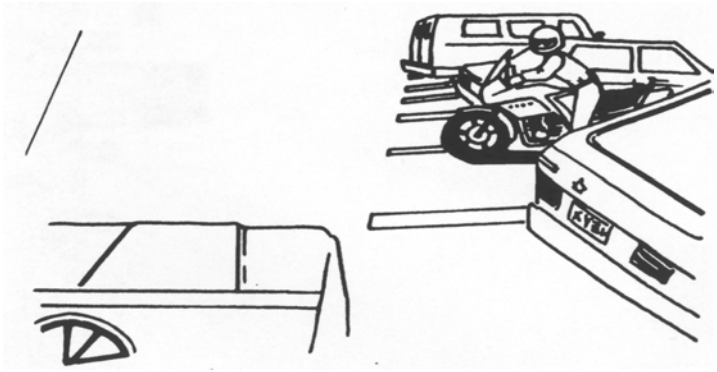
- **On Curves** – You can move from one portion of a lane to another to get a better view through a curve. Moving to the center portion of your lane before a curve—and staying there until you come out of the curve—lets you spot traffic coming toward you as soon as possible. This also allows you to adjust for traffic that is crowding the center line or for debris that is blocking part of your lane.



- **At blind intersections**—Blind intersections can make it hard to see danger coming from the side. If you have a stop sign, stop there first. Then edge forward and stop again, just short of where the cross-traffic lane meets your lane. From that position, you can lean your body forward and look around buildings, parked cars, or bushes to see if anything is coming. Just make sure your front wheel stays out of the cross lane of travel while you're looking.



- **At the roadside**—Angle your motorcycle so that you can see in both directions without straining and without having any part of the cycle in the lane of travel. Angling your motorcycle so that you can get a clear view in both directions is particularly important if you plan to turn across a lane of traffic.



Keeping Your Distance

The best protection you can have is distance a "cushion of space" all around your cycle. If someone else makes a mistake, distance gives you two things:

- Time to react.
- Some place to go.

Distance In Front

"Following too closely" is a major factor in crashes caused by motorcyclists. Motorcycles usually need as much distance to stop as do cars.

How much distance do you need to keep from following too closely? Normally, you will need a minimum of **3 seconds distance** between yourself and the vehicle ahead. Here's how to gauge your following distance:

- Pick out a marker, a pavement marking or lamp post, on or near the road ahead.
- When the rear bumper of the vehicle ahead passes your marker, start counting off the seconds: "one-second-one, one-second-two, one-second-three."
- If you reach your marker before you reach "three," you are following too closely.

A three-second following distance leaves you enough time to stop or swing by if the driver ahead of you stops suddenly. It also gives you a better view of potholes and other dangers in the road.

In some situations, you should open up a four-second following distance. This larger cushion of space is needed if your motorcycle will take longer than normal to stop (for example, if the pavement is slippery with rain) or if you cannot see through the vehicle ahead.

Keep well behind the vehicle ahead even when you are stopped. This will make it easier to get out of the way if someone bears down on you from behind. It will also give you a cushion of space if the vehicle ahead starts to back up for some reason.

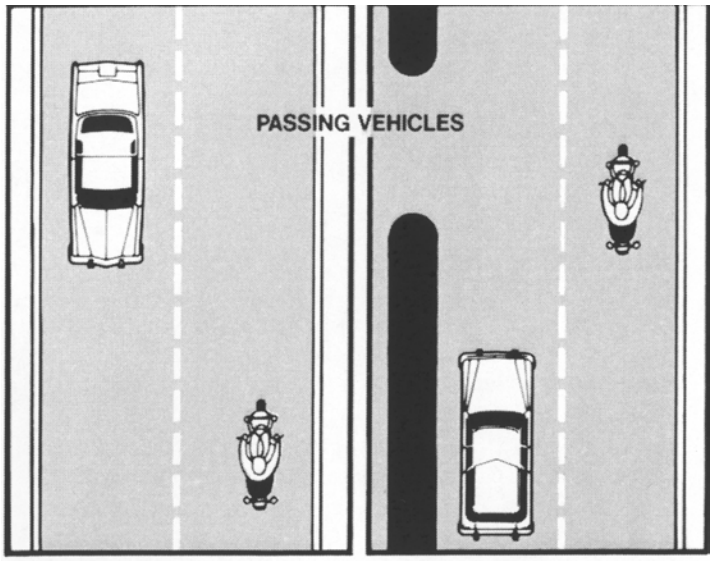
Distance to the Side

By shifting from one portion of a lane to another you can keep a safe cushion of space on both sides. An experienced rider changes position within the lane as traffic conditions change. Here are some conditions that require changes in lane position.

Passing Vehicles

When you are being passed from behind or by an oncoming vehicle, keep in the center portion of your lane. If you ride any closer to them, you could be hit by:

- **The other vehicle**—A slight mistake by you or the passing driver could cause a sideswipe.
- **Extended mirrors**—Some drivers forget that their mirrors hang out further than their fenders.
- **Something thrown from windows**—Even if the driver knows you're there, a passenger may not see you and might toss something on you or the road ahead of you.
- **Blasts of wind from large vehicles**—They can affect your control. You have more room for error if you are in the middle portion when you are hit by this blast than you would if you were on either side of the lane.

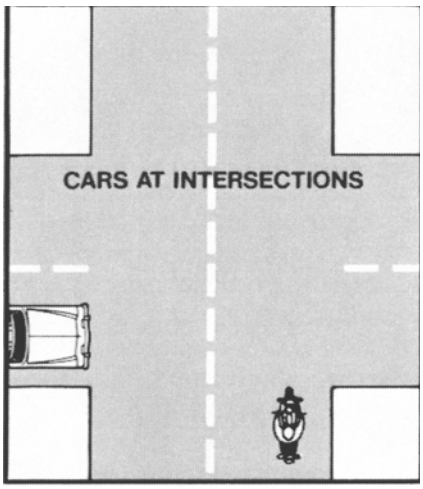


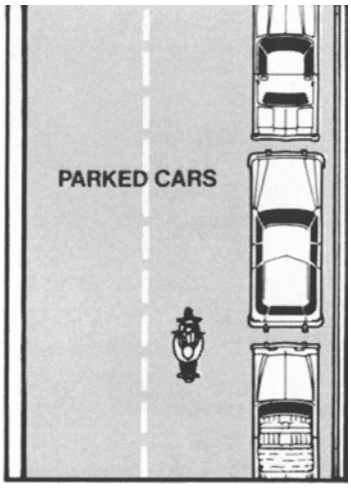
Do **not** move into the portion of the lane farthest from the passing vehicle. While such a move would open up additional space between you and the passing vehicle, it might invite the other driver to cut back into your lane too early.

Cars at Intersections

If a car **can** enter your path at an intersection, assume that it **will.** As you approach the intersection, select a lane position to increase your visibility to the oncoming car. Try to make eye contact with the driver and simultaneously cover the clutch and both brakes to reduce reaction time.

Reduce your speed before the intersection and as you enter the intersection move away from the turning car. Do not change speed or position radically, as that may tell the car driver that you are preparing to turn.





Parked Cars

When passing parked cars, stay toward the left of your lane. This lets you avoid problems caused by doors opening, drivers getting out of cars, or people stepping from between cars.

A bigger problem is the car pulling out in front of you. A driver may pull away from the curb without checking for traffic behind. Even if he does look, he may fail to see you. In either event, the driver might cut into your path.

Drivers making U-turns are the most dangerous. By slowing down or changing lanes, you can make room for someone cutting in. But a car making a sudden U-turn may cut you off entirely, blocking the whole roadway and leaving you with no place to go. Since you can't tell what a driver will do when he starts to pull out, your first move should be to get his attention. Sound your horn. Then continue with caution, until either the driver makes his move or you are past the car.

Lane Sharers

Cars and motorcycles both need a full lane to operate safely. Drivers should not share lanes with motorcycles: motorcyclists should not share lanes with cars.

As a motorcycle rider, you can do two things to prevent lane sharing. First, you can make sure you don't try to share lanes. Don't ride between rows of stopped cars in the same lane. Anything can happen: a hand could come out of a window; a door could open; a car could turn suddenly. Second, discourage lane sharing by others. The best way to do this is to keep a center-portion position whenever other drivers might be tempted to squeeze by you. Drivers are most tempted to do this:

- In heavy, bumper-to bumper traffic.
- When they want to pass you.

- When you are preparing to turn at an intersection.
- When you are about to get in an exit lane, or leave a highway.

If you move to the far side of your lane in these situations, you invite others to share the lane with you.

Merging Cars

Don't assume that drivers on an entrance ramp can see you on the highway. Give them plenty of room. Change to another lane if it is open. If there is no room for a lane change, adjust speed accordingly to open up space for the merging driver to pull into.

Cars Alongside

Do not ride next to cars or trucks in other lanes if you do not have to. A car in the next lane could switch into your lane without warning. Cars in the next lane also block your escape if you come upon danger in your own lane. Speed up or drop back until you find a place that is clear of traffic on both sides.

Distance Behind

If someone tailgates you, don't try to lose them by speeding up. You'll just end up being tailgated at a higher speed.

The only safe way to handle a tailgater is to get him in front of you. When someone is following too closely, the best thing to do is change lanes and let him pass. If you can't do this, slow down and open up extra space ahead of you. This will encourage him to pass. If he doesn't pass, you will have given yourself and the tailgater more time and space to react in case an emergency does develop.

Handling Dangerous Surfaces

Your chance of falling increases whenever you ride across:

- Slippery surfaces
- Uneven surfaces or obstacles
- Railroad tracks
- Grooves and gratings.

Slippery Surfaces

Motorcycles handle better when ridden on surfaces giving good traction. Surfaces that provide poor traction include:

- Wet pavement, particularly just after it starts to rain and before surface oil washes to the side of the road.
- Gravel roads, or places where sand and gravel have collected on paved roads.
- Mud, snow, and ice.
- Lane markings and steel plates and manhole covers, especially when wet.

Handling Slippery Surfaces

There are a number of things you must do to ride safely on slippery surfaces:

Reduce Speed–Slow down before you get to a slippery surface as your motorcycle needs more distance to stop. By going slower, you can stop and turn more gradually, lessening your changes of skidding. It is particularly important to reduce speed before entering wet curves.

Avoid Sudden Moves–On slippery surfaces, any sudden change in speed or direction can cause a skid. Be as smooth as possible when you speed up, shift gears, turn or brake.

Use Both Brakes—Don't be afraid to use the front brake as well as the rear brake. The front brake is still more effective than the rear brake, even on a slippery surface. Just be careful to apply it gradually and avoid locking up the front wheel. Don't squeeze the brake lever too hard.

Avoid Slippery Areas—Try to find the best surface available, and use it.

- Under normal conditions, riding on the grease strip is not dangerous. However, the grease strip can become dangerous when wet. When it starts to rain, move out of the center portion entirely, and ride in the tire tracks left by cars. Often, the left tire track will be the best position. However, you should change your lane position for traffic and other roadway conditions as well.
- Watch for oil spots when you stop or park. If you put your foot down in the wrong place, you may slip and fall.

- Dirt and gravel tend to collect along the sides of the road—especially on curves and ramps leading to and from highways. Stay away from the edge of the road, particularly when making sharp turns at intersections and when getting on or off freeways at high speed.
- Rain dries and snow melts faster on some sections of a road than on others. Try to stay on the driest, least slippery part of the lane at all times.

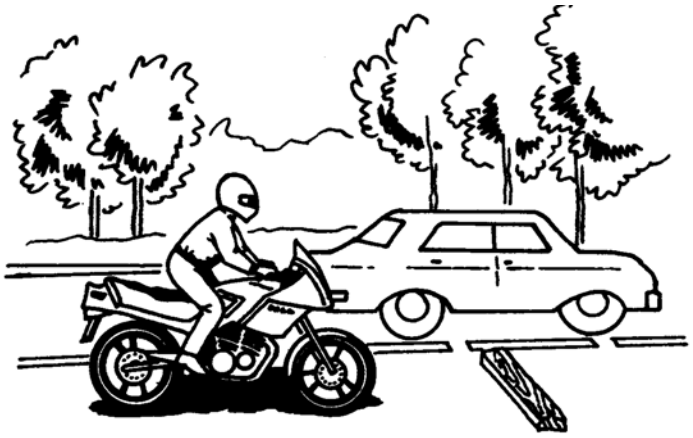
Very Slippery Surfaces

Safe riders wouldn't even consider riding on roads covered with ice or snow. However, you may find yourself on a road with scattered patches of ice or snow. Patches of ice tend to crop up in low or shaded areas and on bridges and overpasses. You may also encounter, from time to time, wet surfaces or wet leaves in the fall. These are just as slippery as an ice patch.

Avoid all of these surfaces if at all possible. If you can't, keep your bike straight up and proceed as slowly as possible, letting your feet skim along the surface so you can catch yourself if the bike starts to fall. Be sure to keep off the brakes and if possible, squeeze the clutch and coast while you are on a very slippery surface.

Uneven Surfaces and Obstacles

Watch for uneven surfaces such as bumps, broken pavement, potholes, or railroad tracks. If you have to ride over them, or obstacles such as a piece of tire tread or tailpipe, here's what you should do:



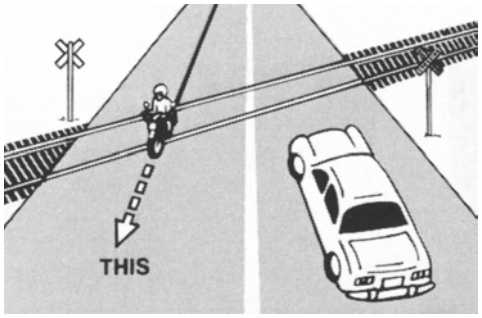
- If time permits, slow down to reduce the jolt.
- Make sure the motorcycle is straight up.
- Rise slightly off the seat with your weight on the foot pegs so you can absorb the shock with your knees and elbows.

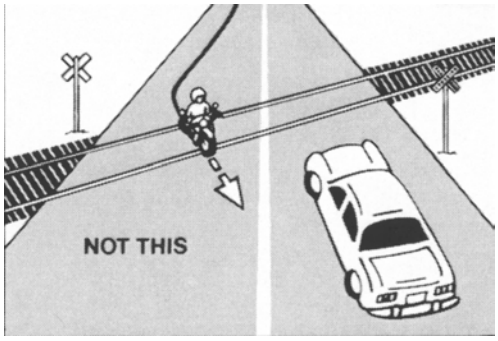
Rising off the seat will cut your chances of being thrown off a bike. However, controlling the throttle can be somewhat tricky. Practice this technique in a safe area (such as a deserted parking lot) before you try to do it on-street.

If you ride over an object on the street, it's a good idea to pull off the road and check your tires and rims for damage before going any farther.

Railroad Tracks

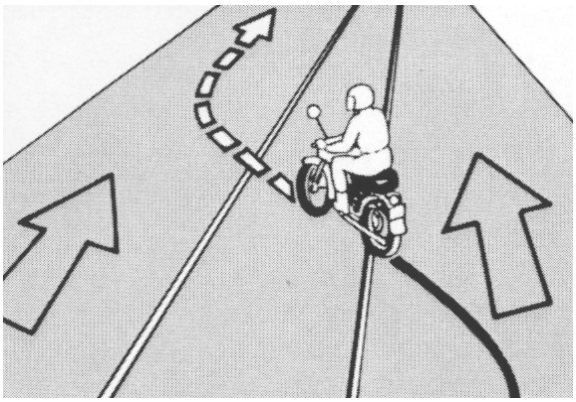
You don't have to cross railroad tracks head-on (at a 90 degree angle.) Usually, it is safer to take the tracks as they come, riding straight within your lane. A motorcycle can cross tracks at an angle as sharp as 45 degrees without difficulty. Changing your course to take tracks head-on can be more dangerous than crossing at an angle – it may carry you into another lane of traffic.





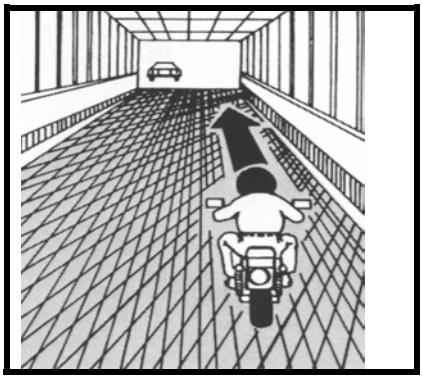
You do need to change direction, however, to cross something that runs in the same direction you are going. For example, you may wish to cross trolley tracks, ruts in the middle of the road, or pavement seams that run parallel to your course.

To cross these safely, move far enough away to be able to cross them at an angle of at least 45 degrees. Then, make a quick, sharp turn across. Do not try to edge across. The tracks or seam could catch your tires and throw you off balance.

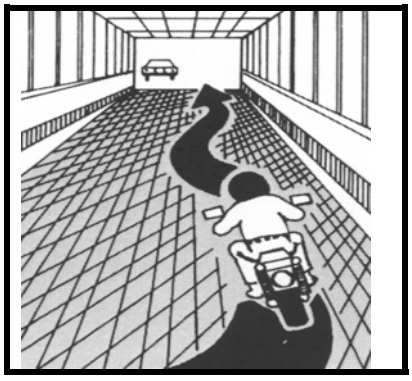


Grooves and Gratings

When you ride over rain grooves or metal bridge gratings, the motorcycle shakes. It's an uneasy, wandering feeling, but it's generally not dangerous. The best thing to do is relax, stay on course, maintain speed, and ride straight across. Some riders make the mistake of trying to cross these surfaces at an angle. This may reduce the uneasy feeling, but is also forces the rider to zigzag to stay in the lane. The zigzag is far more dangerous than the wandering feeling.



RIGHT



WRONG

Riding at Night

At night it is harder for you to see and be seen. Other drivers may have a hard time picking your headlight or taillight out of the greater number of car lights around you.

Here are some methods that will help you ride safely at night:

Reduce Your Speed—If something is lying in the road ahead, you may not be able to see it until you are very close to it. If you are going too fast, you may not be able to avoid it. Always drive slower at night than you would during the day—particularly on roads you don't know well.

Increase Distance—No one can judge distance as well at night as during the day. Your eyes rely greatly upon shadows and light contrasts to judge both how far away an object is and how fast it is coming. These contrasts are missing or distorted under the artificial light available at night. Allow yourself extra distance at night. Open up a three-second following distance. And give yourself more distance in which to pass.

Use the Car Ahead—If a car is ahead of you, make the most of it. The car's headlights can give you a better view of the road ahead than even your high beam can. And keep an eye on the car's taillights and brakelights. Taillights bouncing up and down can alert you to bumps or rough pavement.

Use Your High Beam—Get all the light you can. Use your high beam whenever you are not following or meeting a car.

You should be flexible about lane position, changing to whatever portion of the lane is best able to help you see, be seen, and keep an adequate space cushion. For example, riding in the center portion at night is not nearly as dangerous as some people would lead you to believe. Cars seldom pass over a pothole or road debris without some warning—like a flash of brake lights.

Dealing with Emergencies

No matter how careful you are, there will be times when you find yourself in a tight spot. Your chances of getting out safely depend upon your ability to react quickly and properly. The most important emergency skills are those needed to make quick stops and quick turns. These skills should be practiced in safe areas before you need to use them on the road.

Quick Stops

To stop quickly, apply both brakes. Don't be shy about using the front brake, but don't grab at it, either. Squeeze the brake lever steadily and firmly, applying the front brake as fully as you can without locking the front wheel. At the same time, apply the rear brake hard without locking it.

If you are on a *straightaway*, even with a locked rear wheel, you can still control the cycle and stop quickly as *long as your motorcycle is upright and going in a straight line.*

If you must stop quickly *while turning*, conditions may not always permit you to straighten up the motorcycle and then stop. In such cases, apply the brakes and start slowing the motorcycle. As you slow down, you can reduce your lean angle and apply more brake pressure until the motorcycle is straight and maximum brake pressure is possible. In either case, remember that the motorcycle should be straight up when you come to a full stop. If you straighten the handlebar in the last few feet of stopping, you know the motorcycle will be straight up and in balance.

Evasive Maneuvers

Sometimes you may not have enough room to stop, even if you were to use both brakes properly. For example, an object might appear suddenly in your path. Or, the car ahead might squeal to a stop. The only way to avoid a collision would be to make an evasive maneuver.

The key to making an *evasive maneuver* is to get the motorcycle to lean quickly in the direction you wish to turn. The sharper the turn, the more the bike must lean.

To get the motorcycle to lean quickly, push on the inside of the handlegrip in the same direction you want to turn. If you wish to turn to the right, push on the inside of the right handlegrip. This causes the front wheel to move slightly to the left as you and the motorcycle continue straight ahead. As a result, the motorcycle will lean to the right.

As the motorcycle begins to lean, you will maintain pressure on the inside of the handlegrip in the direction of the lean. You don't have to think about it. Your instincts will make you press on the handlegrip to keep the motorcycle from falling over.

You can demonstrate this to yourself. *While riding in a straight line, press the inside of the right handlegrip. You will notice the motorcycle* turn to the

right. This is how you get the motorcycle to lean in normal turns, but most people don't notice it except on very sharp turns. Practice making quick turns so you can make them in a real emergency.

In making an evasive maneuver, try to stay in your own lane. The moment you change lanes, you risk being hit by a car. Change lanes only if you have enough time to make sure there are no vehicles in the other lane. You should be able to squeeze by most obstacles without leaving your lane. This is one time when the size of the motorcycle is in your favor. Even if the obstacle is a car, there is generally room to pass beside it. However, the only time you should try to squeeze by a car in your lane is when you are faced with a true emergency.

Mechanical Problems

You can find yourself in an emergency the moment something goes wrong with your motorcycle. Mechanical problems include tire failure, a stuck throttle, a "wobble," chain problems, and engine seizure.

In dealing with any mechanical problem, you must take into account the road and traffic conditions you face. Here are some guidelines that can help you handle some mechanical problems safely.

Tire Failure

If the cycle starts handling differently, pull off and check the tires. Perhaps the hardest part of dealing with tire failure is reacting quickly. You will seldom hear a tire go flat. You must be able to tell when a tire has lost air suddenly from the way the cycle reacts.

If the front tire goes flat, the steering will feel heavy. If the rear tire goes flat, the back of the motorcycle will tend to jerk from side to side. If one of your tires suddenly loses air, you must react quickly to keep your balance. A front wheel flat is particularly dangerous. It affects your steering, and you have to steer well to keep your balance.

Here's what to do if either tire goes flat while riding:

1. Hold the handlegrips firmly and concentrate on steering. Try to keep a straight course.
2. If you know which tire is flat, gradually apply the other brake.
3. Wait until the motorcycle is going very slowly. Then, edge to the side of the road, and stop.

Stuck Throttle

Sometimes when you try to operate the throttle you may find that it won't close. If this happens when you are slowing for traffic ahead or making a turn, you must react quickly to prevent a crash.

Your first reaction will be automatic: you will twist the throttle back and forth. If the throttle cable is stuck, this may free it. However, if the throttle stays stuck after you have rotated it several times, immediately operate the engine cut-off switch and pull in the clutch. Use of the engine cut-off switch and the clutch at the same time will remove power from the rear wheel though engine noise may not immediately decline. Once you have the motorcycle

"under control" pull to the side of the road and stop.

After you have stopped, check the throttle cable carefully to find the source of the trouble. Make certain the throttle works freely before you start to ride again.

Wobble

A "wobble" is when the front wheel and handlebars suddenly start to shake from side-to-side. This can occur at low, as well as high speeds.

Most wobbles can be traced to improper loading, the use of unsuitable accessories or the use of incorrect tires or tire pressure. If you are carrying a heavy load, lighten it. If you can't lighten the load, shift it. Center the weight lower to the ground and farther forward on the cycle. Also check your tire pressure and the settings for spring pre-load, airshocks, and dampers. Make sure they are at the levels recommended by the manufacturer for carrying that much weight. If you have a windshield or fairing, make sure it is mounted properly.

In addition to the above items, other things that may contribute to wobble are (1) poorly adjusted steering, (2) worn steering parts, (3) a front wheel that is bent, misaligned, or out of balance, (4) loose wheel bearings, (5) loose spokes, and (6) swing arm bearings, to name a few of the common causes.

Do *not* try to accelerate out of a wobble. That will only make the cycle more unstable. Instead:

- Grip the handlebars firmly, but don't try to fight the wobble.
- Close the throttle gradually, and let the motorcycle slow down. Do not apply the brakes; braking could make the wobble worse.
- Pull off the road as soon as you can. Then find out what caused the wobble—and fix it.

Chain Problems

If your chain slips or breaks while you're riding, it could lock the rear wheel and cause your cycle to skid. You must react quickly.

Slippage—You may first hear or feel the chain slip when you try to speed up quickly or while riding uphill. If so, pull off the road, and check the chain *and* sprockets. Tightening the chain may help. But usually the problem is a worn or stretched chain or worn or bent sprockets. In these cases, replace the chain, the sprockets, or both before riding again.

Breakage—When the chain breaks, you'll notice an instant loss of power to the rear wheel. Close the throttle, and brake to a stop.

Chain slippage or breakage can be avoided by proper maintenance.

Engine Seizure

Engine seizure means that the engine "locks" or "freezes." Engines seize when they are low on oil. Without oil, the engine's moving parts

can't move smoothly against each other, and the engine overheats. The first sign that an engine needs oil may be a loss of engine power. You may also notice a change in the engine's sound. If available, check the engine oil pressure light and temperature gauge.

If you ignore these warnings and don't add oil, the engine may seize. When this happens, the effect is the same as a locked rear wheel.

Squeeze the clutch lever to disengage the engine from the rear wheel. Pull off the road and stop. Let the engine cool. You may be able to add oil and restart the engine. Even so, you should have the engine checked thoroughly for damage as soon as possible.

Getting Off the Road

If you need to leave the road to check the motorcycle (or just to rest for a while), be sure you:

1. **Check the roadside**—Make sure the surface of the roadside is firm enough to ride on. If it is soft grass, loose sand, or if you're just not sure about it, slow way down before you turn onto it.
2. **Signal others**—Drivers behind might not expect you to slow down. As soon as you can, give a clear signal that you will be slowing down and changing direction. Make sure to check your mirror and make a head check before you take any action.
3. **Pull well off the road**—Get as far off the road as you can. It can be very hard to spot a motorcycle by the side of the road. You don't want someone else pulling off at the same place you are.

Other Emergencies

There at two other emergencies that motorcycle riders should be prepared for. They happen often enough to be real problems.

Flying Objects

From time to time you can be struck by insects, cigarettes thrown from cars, or rocks kicked up by the tires of the vehicle ahead. If you aren't wearing face protection, you could be hit in the eye, face, or mouth. If you are wearing face protection, it might get smeared or cracked, making it difficult for you to see. Whatever happens, don't let it affect your control of the motorcycle. Keep your eyes on the road and your hands on the handlebars. As soon as it is safe, pull off the road and repair the damage.

Animals

Naturally, you should do everything you can to avoid hitting an animal. However, if you are in traffic, don't swerve out of your lane to avoid a small animal. Hitting something small is less dangerous to you than hitting something big—like a car.

Motorcycles tend to attract dogs. If you find yourself being chased, don't kick at the animal. It's too easy to lose control of the motorcycle. Instead, shift down and approach the animal slowly. As you reach it, speed up quickly. You will leave the animal behind.

Carrying Passengers and Cargo

You should avoid carrying passengers or large loads until you have gained a lot of experience riding alone. The extra weight changes the way the motorcycle handles, balances, turns, speeds up, and slows down. And, before taking a passenger or heavy load on the street, practice in a safe, off-road area.

Passengers

To carry passengers safely you must:

- Make sure your motorcycle is equipped and adjusted to carry passengers.
- Instruct the passenger before you start.
- Adjust your riding technique for the added weight of the passenger.

Equipment

To carry passengers, you must have:

- **A proper seat**—The seat should be large enough to hold both you and your passenger without crowding. You should not sit any further forward than you usually do.
- **Footpegs**—The passenger must have his own set of footpegs. Without a firm footing, your passenger can fall off and pull you off too.
- **Protective equipment**—Passengers should have the same type protective equipment and clothing recommended for operators.

You should also adjust the cycle to handle the extra weight. While your passenger sits on the seat with you, adjust the mirror and headlight to the change in the motorcycle's angle. And it is a good idea to add a few pounds of pressure to the tires if you carry a passenger. (Check your owner's manual). Then adjust the suspension to handle the additional weight.

Instructing Passengers

Don't assume the passenger knows what to do—even if he or she is a motorcycle rider. Provide complete instructions before you start.
To prepare your passenger for riding, tell him or her to:

- Get on the motorcycle after you have started the engine.
- Sit as far forward possible without crowding you.
- Hold firmly to your waist, hips, or belt.
- Keep both feet on the pegs at all times, even when the motorcycle is stopped.
- Keep their legs away from the muffler.
- Stay directly behind you, leaning as you lean.
- Avoid any unnecessary talk or motion.

Also, be sure to tell your passenger to tighten his or her hold when you (1) approach surface problems, (2) are about to start from a stop, and (3) warn that you are going to make a sudden move.

Riding with Passengers

Your motorcycle will respond slower with a passenger on board. The heavier your passenger, the longer it will take to slow down, speed up, or make a turn—especially on a light cycle. Here's what you should do to adjust for the difference in handling:

- Go a little slower, especially when taking curves, corners, or bumps.
- Start slowing earlier as you approach a stop.
- Open up a larger cushion of space ahead and to the sides.
- Wait for larger gaps when you want to cross, enter, or merge with traffic.

Remember, you should try to warn your passenger of special conditions ahead—when you will pull out, stop quickly, turn sharply, or ride over a bump. Otherwise, talk as little as possible. When you must talk, turn your head slightly to make yourself understood. But, be sure you don't turn your head too far. Never take your eyes off the road ahead.

Carrying Loads

Most motorcycles are not really designed to carry much cargo. However; small loads can be carried safely if they are positioned and fastened properly.

- ***Keep the Load Low***—Fasten loads to the seat, or put them in saddle bags. Do not pile loads against a sissybar or frame on the back of the seat. Placing a load high against a bar or frame raises the cycle's center of gravity and disturbs its balance.
- ***Keep the Load Forward***—Place the load over or in front of the rear axle. Tank bags are one way to keep loads forward, however, use caution when loading hard or sharp objects. Mounting loads behind the rear axle can affect how the motorcycle turns and brakes. It can also cause a wobble.
- ***Distribute the Load Evenly***—If you have saddle bags, make sure each is loaded with about the same weight. An uneven load can cause the motorcycle to drift to one side.
- ***Secure the Load***—Fasten the load securely with elastic cords (bungie cords). A loose load can catch in the wheel or chain. If that happens, the rear wheel may lock up and skid. Do not use rope as it tends to stretch and knots come loose permitting the load to shift or fall off.
- ***Check the Load***—Stop and check the load every so often. Make sure it has not worked loose or moved.

Group Riding

If you ride with others, you must do it in way that doesn't endanger anyone or interfere with the flow of traffic.

Keep the Group Small

A large group tends to interfere with traffic. It makes it necessary for cars to pass a long line of motorcycles at a time. Also, large groups tend to be separated easily by traffic or red lights. Those who are left behind often ride unsafely trying to catch up. If your group is larger than four or five riders, divide it into two or more smaller groups.

Keep the Group Together

Here are some way to keep the group together:

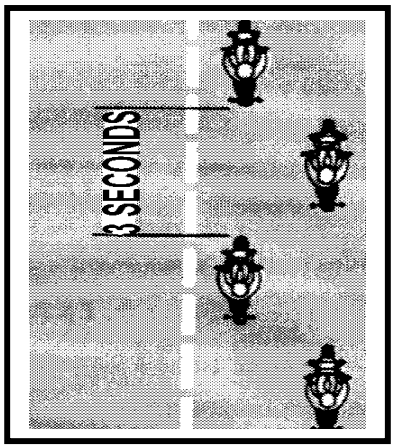
- ***Plan Ahead***—If you are the leader, look ahead for changes. Give signals early so "the word gets back" in plenty of time. Start lane changes early enough to allow everyone to complete the change.
- ***Put Beginners up Front***—Place inexperienced riders behind the leader, where they can be watched by more experienced riders.
- ***"Follow Those Behind"***—Let the tailender set the pace. Use your mirrors to keep an eye on the person behind. If he or she falls behind, slow down a little. If everyone does this, the group will stay with the tailender.
- ***Know the Route***—Make sure everybody knows the route. Then, if someone is separated for a moment, he or she won't have to hurry to avoid getting lost or taking a wrong turn.

Keep Your Distance

It's important to keep close ranks and a safe distance. A close group takes up less space on the highway, is easier to see, and is less likely to be separated. However, it must be done properly.

- ***Don't Pair Up***—Never operate directly alongside another motorcycle rider. If one of you has to avoid a car or something on the road there would be no place to go. If you have to say something to another rider, wait until you are both stopped—then it's okay to pull up alongside.
- ***Staggered Formation***—Riding in a staggered formation is the best way to keep ranks close and yet maintain an adequate space cushion. In a staggered formation, the leader rides to the left side of the lane, while the second rider stays a little behind and rides to the right side of the lane. A third rider would take the left position, a *normal three-second distance* behind the first rider. The fourth rider would be a normal three-second distance behind the second rider. This formation keeps the group close and keeps each rider a safe distance from others ahead, behind and to the sides.

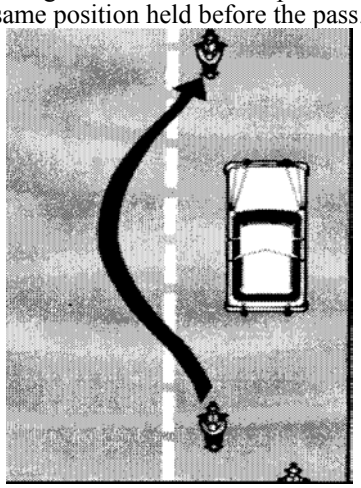
A staggered formation can be used safely on an open highway. How-

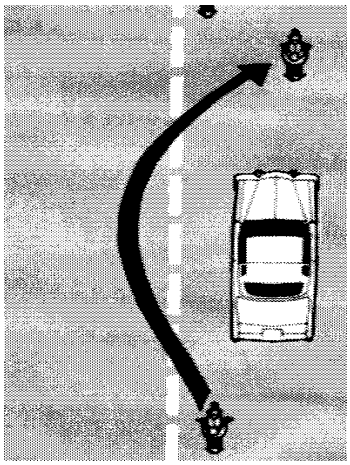


ever, it is best to move into a single file formations when taking curves, making turns, or entering or leaving a highway.

- ***Passing in Formation***—When riders in a staggered formation want to pass, they should do one at a time. First, the lead rider should pull out and pass when it is safe. After passing, the leader should return to the left position and continue riding at passing speed until he has opened up room for the next rider. As soon as the first rider has passed safely, the second rider should move up to the left position and watch for a safe chance to pass. After passing, this rider should return to the *right position* and open up room for the next rider.

Some people suggest that the leader should move to the right side after passing a vehicle. This is not a good idea. By taking up a rightside lane position, the leader would encourage the second rider to pass and cut back in before a large enough cushion of space has been opened up in front of the passed vehicle. It's much simpler and safer if each rider waits until there is enough room ahead of the passed vehicle to allow the rider to move into the same position held before the pass.





Being in Shape to Ride

Riding a motorcycle is a demanding and complex task. To become a skilled rider, you must be able to give adequate attention to the riding environment and to the operation of the motorcycle, to identify potential hazards, to make good judgments, and to execute each decision quickly and skillfully. Your ability to perform at your best and to respond to changing road and traffic conditions is influenced by how fit and alert you are. Alcohol and other drugs, more than any other factor, degrade your ability to think clearly and to ride safely with as little as one drink. Let's examine the risks involved in riding after drinking and what to do to prepare to intervene to protect yourself and your follow riders.

Why This Information is Important

Alcohol is a major contributor to motorcycle crashes, particularly fatal crashes. Statistics show that 37 percent of all riders killed in motorcycle crashes had been drinking. Only a third of these drivers had a blood alcohol concentration above the legal limit. The rest had only a few drinks in their systems-enough to impair their riding skills.

The drinking problem is just as extensive among motorcyclists as it is among automobile drivers. However, motorcyclists are far more likely to be killed or injured in a crash. Fatalities or injuries occur in 92 percent of alcohol-involved motorcycle crashes and only 35 percent of automobile crashes. On a yearly basis, 21 motorcyclists are killed and 126 injured in crashes involving alcohol. These statistics are too overwhelming to ignore.

Some people would never, under any circumstances, ride a motorcycle after drinking alcohol. Others are willing to take their chances, even when it means the odds are against them. The most effective way to improve your chances of riding safely is to become knowledgeable about the effects of alcohol and other drugs and to learn how to minimize the risks. These are positive steps you can take to protect yourself and to prevent others from injuring themselves.

Alcohol in the Body

Alcohol enters the bloodstream quickly. Unlike most foods and beverages, it does not need to be digested. Once alcohol is in the bloodstream, it quickly reaches the brain and begins to affect its functions. Your reaction time slows down, and your physical coordination is impaired.

In addition, your field of vision, hearing, concentration, speech and balance are all affected. Braking and steering actions take longer, your ability to handle turns, stops and emergency situations decreases substantially, and you become less aware of what's going on around you. Your ability to see clearly is significantly reduced. At night, your eyes recover more slowly from the glare of headlights.

Although people may differ in their reactions, as you consume more alcohol, your skill level decreases, and you may become more aggressive and

more competitive. You may also have trouble judging distances, speeds and movements of other vehicles. Finally, you may have trouble controlling the motorcycle. As a result, this may cause over and under reactions to riding situations.

Alcohol concentration in the body is related to the amount of alcohol consumed, the time spent drinking and a person's body weight. Only time—not exercise, coffee, cold showers or fresh air—can sober you up.

Alcohol and the Law

It is against the law to operate a motor vehicle while intoxicated. In Virginia, a person with a blood alcohol content of .08 or above is considered intoxicated. If the police stop you and suspect that you have been drinking, they will ask you to take a chemical test to analyze the amount of alcohol in your body. Under Implied Consent laws, if you operate a motor vehicle on public roads or highways in Virginia, you agree to take a chemical test on request. It is in your best interest to take the test because if you refuse, your license may be suspended for one year, whether or not you are convicted of driving under the influence. If you refuse the chemical test or if your blood alcohol level is .08 or above, your license will be immediately suspended for seven days from the date of your arrest.

If you are convicted of driving under the influence of alcohol, you are subject to penalties imposed by the courts as well as administrative action taken by DMV. Although many factors are considered before these actions are taken, the severity of the penalties can be significant.

For example, the court can revoke your license for one year if you are convicted of a first offense, for three years if convicted of a second offense, and indefinitely if convicted of a third offense. Court action may also include assignment to an Alcohol Safety Action Program (ASAP), fines up to $1,000 and a jail sentence.

Fines, jail terms and loss of your driving privilege are only part of the risk involved. You could kill or seriously injure another person. You could be sued, face legal fees and higher insurance rates. You and your family will be embarrassed by your arrest and reports of your arrest in the news.

Alcohol and Other Drugs in Motorcycle Operation

No one is immune to the effects of alcohol. No matter how much friends may brag about their ability to hold their liquor, alcohol makes them less able to think clearly and to perform physical tasks skillfully. Alcohol has extremely harmful effects on the processes involved in motorcycle operation, and these effects begin long before you are legally intoxicated.

Alcohol is not the only drug that affects your ability to ride safely. Many over-the-counter prescriptions, as well as illegal drugs have side effects that increase the risks of riding. While it is difficult to accurately measure the involvement of any particular drug in motorcycle crashes, we do know what effects various drugs have on the processes involved in riding a motorcycle. We also know that the combined effects of alcohol and any drug are more dangerous than either is alone.

Minimizing the Risks

One of the functions that alcohol affects first is your ability to judge how well you are doing. This means that although you may be performing more and more poorly, you think you are doing better and better, and you ride confidently into greater and greater risks. The best way to minimize the risks of drinking and riding is to decide before you start drinking that you are not going to ride.

Stepping in to Protect Friends

When people have had too much to drink to make a responsible decision themselves, it is up to others to step in and keep them from taking too great a risk. No one wants to do this—it's uncomfortable, embarrassing and thankless. You are rarely thanked for your efforts at the time. But the alternatives are often worse.

There are several ways you can step in to keep your friends from hurting themselves or wrecking their bikes.

- ***Arrange a safe ride***—Provide alternative ways for them to get home.
- ***Slow the pace of drinking***—Direct them by involving them in other activities.
- ***Keep them there***—Use any excuse to keep them from getting on their bike if they've had too much. Serve them food and coffee to pass the time. Explain your concerns for their risks of getting arrested or wrecking their motorcycle.
- ***Keep the bike there***—If you can't control the rider, control the bike. Take the keys or temporarily disable the bike (e.g., loosen or switch the plug leads enough so they won't fire).

It helps to enlist support from others when you decide to step in. The more people on your side, the easier it is to be firm and the harder it is for the drunk rider to resist. While you may not be thanked at the time, you will never have to say, "If only I had…"

Even small amounts of alcohol or other drugs can negatively effect your riding performance. Be sure of your abilities by avoiding the mixing of riding with either alcohol or drugs.

Fatigue

Riding a motorcycle is much more tiring than driving a car. When you plan a long trip, bear in mind that you'll tire much sooner than you would in a car. Also remember that fatigue can affect your control of the cycle.

Here are some things you can do to keep from getting too tired:

- Protect yourself from the elements. Wind, cold, and rain make you tire quickly. Dress warmly. A windshield is worth its cost if you plan to do a lot of long distance riding.
- Limit your distance. Experienced riders seldom try to ride more than about six hours a day.
- Take frequent rest breaks. Stop and get off the cycle.

Your Motorcycle

There are plenty of things on the highway that can cause you trouble. Your motorcycle should not be one of them. To make sure your motorcycle won't let you down (1) start out with the right equipment, (2) keep it in a safe riding condition, and (3) avoid add-ons or modifications that make your cycle harder to handle.

The Right Equipment

First, make sure your motorcycle is right for you. It should fit you. Your feet should be able to reach the ground while you are seated on the cycle.

Crashes are fairly common among beginning riders—especially in their first six months of riding. Don't try a big bike until you have a lot of riding experience.

No matter how experienced you may be, ride extra carefully on any bike that's new or unfamiliar to you. More than half of all crashes occur on cycles their riders have used for less than six months.

A few items of equipment are necessary for safe operation. At minimum, your cycle should have:

- Headlight and taillight
- Front and rear brakes
- Turn signals
- Horn
- Two mirrors

Motorcycle Care

A motorcycle needs more frequent attention than a car. A minor mechanical failure in a car seldom leads to anything more than inconvenience for the driver. When something goes wrong with a motorcycle, it may cause a crash.

The only way to head off problems before they cause trouble is to inspect your motorcycle carefully and often. If you find something wrong, fix it right away. In addition to the checks you should make before every trip, here are some checks you should make at least *once each week*:

Tires—Look for cuts or nails in the tread and cracks in the sidewalls. Check for excess or uneven tread wear. Tread problems can make the cycle hard to handle, especially on wet pavement. If the wear is uneven, have the wheels checked for balance and alignment. Check the air pressure with a gauge to make sure each tire is at the pressure recommended by the manufacturer. Improper air pressure can affect your cycle's braking and turning. Low pressure also can lead to blowouts.

Wheels—Check the rims for cracks, dents, or rust. Check for missing or loose spokes on wire-spoked wheels. Lift each wheel off the ground and spin it, listening for noise and looking for out-of-line motion. Shake the wheel from side to side, checking for looseness.
Cables—Check brake, clutch, and throttle cables for kinks or broken strands. Replace as necessary. Lubricate the control mechanisms at both ends of each cable.
Oil—Keep the oil up to the recommended level. Lack of oil can make your engine seize.
Drive Train—For a chain-driven cycle, make sure your chain is adjusted properly. Check the sprockets for worn or bent teeth. For a shaft-driven cycle, look for oil on the shaft unit. If the housing is greasy, check the grease level and make sure any access plugs are fitted tightly.
Fasteners—Check for loose or missing bolts, nut, or cotter pins. It's easier to spot missing items if you keep the motorcycle clean.
Brakes—Make sure the brakes are adjusted properly. If you hear a scraping sound when stopping, check the brake system—linings, calipers, and linkage. For hydraulic brakes, check the fluid level.
Lights—Check all lights for lens cracks or moisture inside the lens. Also look for rust spots on light reflectors.
Hydraulic Systems—Motorcycles with hydraulic clutches and brakes should have fluid levels checked routinely and fluids changed according to the manufacturers' recommendations. See your owner's manual.
Coolant—On water-cooled motorcycles, the radiator and coolant reservoirs should be checked and serviced according to the owner's manual.

Earning Your License

Safe riding requires knowledge and skill. A Class M added to your driver's license permits you to operate your motorcycle legally in Virginia. Or, you may be licensed to operate a motorcycle only. To earn either of these licenses, you will first need to pass a vision test, a driver's knowledge exam based on the *Virginia Driver's Manual*, a motorcycle knowledge exam based on this publication, and a motorcycle skills test.

For example, you will be tested for your ability to:

- Get and keep yourself and your motorcycle in safe condition.
- Accelerate, brake, shift, and turn safely.
- Help others see you and help you see and communicate with them.
- Adjust speed and position to changes in traffic and riding conditions.
- Stop and turn quickly to cope with problems while riding.

To pass, you will have to study this manual thoroughly *and* practice the skills and techniques it discusses.

Motorcycle Knowledge Exam

The motorcycle knowledge exam consists of 25 questions based on information found in this publication. Study this manual before attempting to take the motorcycle knowledge exam. You must successfully complete this exam before taking the skills test.

See if you can answer these questions. They are similar to questions you'll find on the actual test. The correct answers are upside down at the bottom of the next page.

1. It is MOST important to flash your brake light to warn the driver behind that:
   A. He is following too closely.
   B. You will be slowing suddenly.
   C. There is a stop sign ahead.

2 The FRONT brake supplies how much of a cycle's total stopping power:
   A. About one-quarter.
   B. About on-half.
   C. About three-quarters.

3. The key to making a quick turn is:
   A. Shifting your weight quickly.
   B. Turning the handlebars quickly.
   C. Getting the cycle to lean quickly.

4. If you get a flat tire while riding, you should:
   A. Hold the handlegrips firmly and stay off the brakes.
   B. Shift your weight toward the good wheel and brake normally.
   C. Brake on the good wheel and pull off the road as soon as possible.

Skills Test

You should be familiar with your motorcycle and the basic operating skills necessary for your safety before riding on a street with other traffic. To make sure you have the basic skills to ride, you will be required to take a skills test on your motorcycle to obtain your license.

When you report for the test you must have:

- An approved helmet with a face shield and safety glasses or goggles.
- Your motorcycle, with a valid license plate and a current inspection sticker.

You should wear proper protective clothing, including long pants and long-sleeved shirt or jacket, boots or shoes that cover the ankles and riding gloves.

The examiner will conduct a vehicle/equipment inspection before you perform riding maneuvers to make sure your motorcycle is properly registered and inspected and in good working condition.

The skills test will include exercises that measure your ability to handle a motorcycle including starting, accelerating, shifting, turning, braking and swerving. The test will be conducted off-street.

The license examiner will explain each test exercise and scoring before you begin the test. You must successfully complete all the skills exercises to pass the test.

The test may be stopped by the examiner if you operate your motorcycle in a unsafe manner, disregard instructions or lose enough points to fail.

You can also stop the test. You should not try a maneuver that you do not feel you can perform safely. If you feel the exercise is too hard or you cannot safely follow the instructions, you should tell the examiner. It would be best to take more time to practice your skills and return another day.

Skills Test Waiver

DMV will waive the skills test for motorcycle license applicants who have successfully completed a Virginia Rider Training Program motorcycle rider training course within the past two years. Bring your course completion card with you when you apply for your motorcycle license and you will not be required to take the skills portion of your test. Applicants still will be required to pass written and vision exams and meet other DMV requirements.

Answer: 1b, 2c, 3c, 4a

Rider Skills Training

If you don't think you have the knowledge or skill to pass the motorcycle operator license tests, or you would like to improve your skills, you should enroll in a motorcycle rider training course. Classes are designed for both beginning riders and experienced riders, and are taught by certified motorcycle safety instructors Classes will provide you with the opportunity to learn new techniques and practice your skills in a controlled, safe environment.

Classes are offered at community colleges and other locations throughout the state. For information about a course near you, dial 1-800-446-9227 or contact DMV at 1-866-DMV-LINE, 1-800-435-5137 or check the Internet at *www.dmvNOW.com*.

Administered by the Department of Motor Vehicles, the Virginia Rider Training Program was established by the General Assembly in 1984 to reduce the number and severity of motorcycle crashes. To achieve this goal, DMV has programs in rider training, licensing improvement and public awareness. Three dollars from every Virginia motorcycle registration fee is used to support the program.

Virginia Rider Training Program Course Locations

Alberta
Southside Virginia Community College
Christanna Campus
(434) 949-1026

Alexandria
Northern Virginia Community College
Alexandria Campus
(703) 845-6110

Abingdon
Virginia Highlands Community College
(276) 739-2468

Charlottesville
Albemarle County Community Education
(434) 975-9451

Chesapeake
Tidewater Community College
Chesapeake Campus
(757) 822-5247

Danville
Danville Community College
(434) 797-2222

(continued)

Fredericksburg
Germanna Community College
(540) 727-3008**Hampton**
Thomas Nelson Community College
(757) 825-2758

Keysville
Southside Virginia Community College
John H. Daniel Campus
(434) 736-2011

Lynchburg
Central Virginia Community College
(804) 832-7622

Petersburg/Richmond
The Motorcycle Safety Center of Virginia
(804) 368-0989

Richlands
Southwest Community College
(276) 964-7241

Roanoke
Virginia Western Community College
(540) 966-3984

Sterling
Northern Virginia Community College
Loudoun Campus
(703) 450-2551

Weyers Cave
Blue Ridge Community College
(540) 453-2284

Winchester
Lord Fairfax Community College
(540) 868-7121

Wytheville
Wytheville Community College
(276) 223-4700

For motorcycle training in the Southwest or Eastern Shore regions of Virginia, contact the Motorcycle Safety League of Virginia at 1-888-826-7584 to schedule a visit from the Mobile Motorcycle Training Unit.

Rev your engine

and tour our web site at

www.dmvNOW.com

- practice the motorcycle knowledge test
- study the motorcycle operator manual
- gain valuable motorcycle safety tips

Virginia Department of Motor Vehicles
P. O. Box 27412
Richmond, Virginia 23269
1-866-DMV-LINE (368-5463)
1-800-435-5137
www.dmvNOW.com

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